WHAT IS CLAIMED IS:

1. A plasma process apparatus for performing a plasma process on a target substrate, the apparatus comprising:

a process chamber in which the target substrate is installed;

a gas inlet for introducing a gas into the process chamber; and

a plasma discharge production section provided in the process chamber,

wherein the plasma discharge production section includes a first electrode and a second electrode that is closer to the target substrate than the first electrode is, and

only surfaces of the first and second electrodes which can be seen in the normal line direction of the target substrate function as a plasma discharge surface.

2. A plasma process apparatus for performing a plasma process on a target substrate, the apparatus comprising:

a process chamber in which the target substrate is installed;

a gas inlet for introducing a gas into the process chamber; and

a plasma discharge production section provided in the process chamber,

wherein the plasma discharge production section includes a first electrode, an insulating layer formed on a portion of an electrode surface of the first electrode, and a second electrode formed on the insulating layer.

3. The plasma process apparatus according to claim 1 or 2, wherein the gas inlet is provided at the first electrode.

4. The plasma process apparatus according to claim 1 or 2, wherein the first electrode has a concaved plasma discharge surface.

5. The plasma process apparatus according to claim 1 or 2, wherein the area of a plasma discharge surface of the first electrode is larger than that of the second electrode.

6. The plasma process apparatus according to claim 1 or 2, wherein the plasma discharge production section includes a plurality of plasma discharge surface regions of the first electrode and a plurality of plasma discharge surface regions of the second electrode.

7. The plasma process apparatus according to claim 1 or 2, wherein:

plasma discharge surface regions of the first electrode and plasma discharge surface regions of the second electrode are alternately provided along one planar direction of the target substrate; and

the distance between the second electrode and the target substrate is greater than the distance between the adjacent second electrodes.

8. The plasma process apparatus according to claim 1 or 2, further comprising a power source for applying electric energy to the first and second electrodes,

wherein the frequency of the power source is equal to or higher than 100 kHz and equal to or lower than 300 MHz.

9. A method for producing an electronic device using a plasma process apparatus which includes a process chamber in which a target substrate is installed, and a gas inlet for introducing a gas into the process chamber, and a plasma discharge production section

provided in the process chamber, the method comprising the steps of:

installing the target substrate in the process chamber;

introducing the gas through the gas inlet into the process chamber in which the target substrate is installed; and

producing a plasma discharge by the plasma discharge production section to perform a plasma process on a surface of the target substrate,

wherein the gas is introduced along a discharge route of the plasma discharge.

10. A method for producing an electronic device using the plasma process apparatus of claim 1, comprising the steps of:

installing the target substrate in the process chamber;

introducing the gas through the gas inlet into the process chamber in which the target substrate is installed; and

producing a plasma discharge by the plasma discharge production section to perform a plasma process on a surface of the target substrate.

11. An electronic device, comprising an insulating film on an insulating substrate, wherein:

the insulating film contains silicon, nitrogen and hydrogen; and

the bonded hydrogen content in the insulating film is equal to or greater than $7\times10^{21}cm^{-3}$.

12. The electronic device of claim 11, wherein the bonded oxygen content in the insulating film is substantially 0 (zero).

13. The electronic device of claim 11, wherein the insulating film is formed as an outermost layer.

14. The electronic device of claim 11, wherein the insulating substrate is made of an organic material.

15. The electronic device of claim 11, further comprising an organic layer.

16. The plasma process apparatus according to claim 1 or 2, wherein a plasma discharge surface of the first electrode has a concavely curved surface.

17. The plasma process apparatus according to claim 16, wherein a plasma discharge surface of the first electrode and a plasma discharge surface of the second electrode constitute portions of a continuously curved surface.

18. The plasma process apparatus according to claim 1 or 2, wherein a plasma discharge surface of the first electrode has a plurality of cavities.

19. The plasma process apparatus according to claim 18, wherein a gas inlet is formed in a bottom of at least one of the cavities.

20. The plasma process apparatus according to claim 1 or 2, wherein a plasma discharge surface of the first electrode is sandblasted.

21. The plasma process apparatus according to claim 1 or 2, wherein the first electrode is provided with a plurality of concavities opened onto the target substrate.

22. The plasma process apparatus according to claim 21, wherein the shape of the opening of each concavity is rectangular.

23. The plasma process apparatus according to claim 21, wherein the shape of the opening of each concavity is circular.

24. A plasma process apparatus, comprising:

a process chamber in which a target substrate is installed;

a gas inlet for introducing a gas into the process chamber; and

a plasma discharge production section provided in the process chamber for performing a plasma process on the target substrate,

wherein the plasma discharge production section includes a plurality of insulators arranged in a stripe pattern extending along a direction parallel to the target substrate, first electrodes provided in at least areas between the adjacent insulators, and second electrodes provided at ends of the insulators which are closer to the target substrate such that the second electrodes are separated from the first electrodes.

25. The plasma process apparatus according to claim 24, wherein the first electrodes provided between the adjacent insulators are separated from each other.

26. The plasma process apparatus according to claim 24, wherein:

a plurality of gas inlets are formed in the first electrode; and

the plurality of gas inlets are arranged along a direction that is not parallel to the longitudinal direction of the striped insulators.

27. The plasma process apparatus according to claim 25, wherein the plurality of gas inlets are arranged along a direction perpendicular to the longitudinal direction of the striped insulators.

28. The plasma process apparatus according to claim 26, wherein the gas inlets are designed to release a gas in directions parallel to each other.

29. The plasma process apparatus according to claim 26, wherein each gas inlet is designed to release a gas in a direction perpendicular to the plasma discharge surface of the first electrode.

30. The plasma process apparatus according to claim 26, wherein each gas inlet is designed to release a gas in a direction oblique with respect to the normal line direction of the target substrate.